

BRIDGE INSPECTION, INVENTORY AND LOAD RATING
 New York State Department Of Transportation
 OFFICE OF STRUCTURES

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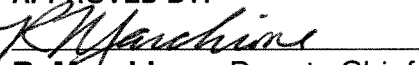
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TECHNICAL ADVISORY

ISSUED BY:
 OFFICE OF STRUCTURES
 STRUCTURES EVALUATION
 SERVICES BUREAU

SUBJECT:

DATE:
 01/25/2012

APPROVED BY:

R. Marchione, Deputy Chief
 Engineer (Structures)-Acting

LEVEL II LOAD RATING QUALITY
 CONTROL REQUIREMENTS

SUPERSEDES:
 NONE

12-001

INTRODUCTION

Quality Control is an essential part of the Load Rating process. The Quality Control review for a Level II Load Rating consists of (1) verifying the accuracy and completeness of the Level II bridge model, and (2) verifying that the analysis engine and settings selected for use in the analysis of the bridge model conform to current NYSDOT Load Rating policies.

REQUIREMENTS

Each Level II Load Rating must undergo a Quality Control review prior to its submission to the Main Office. Deadline for submission of a Level II Load Rating to the Main Office is ninety (90) days after the last day of the bridge's field inspection work. The Load Rating Engineer (LRE) is responsible for the Quality Control review. Two individuals, one of whom shall be the LRE, shall perform the tasks of the Quality Control, each checking the work done by the other. The LRE shall meet the requirements stipulated in Section 165.5(b)(2) of the Uniform Code of Bridge Inspection. The following Level II Load Rating information shall be collected in a folder and placed in the bridge's BIN folder.

- The Level II Load Rating Cover Sheet showing the names of the two individuals that performed the tasks and the completion dates.
- Summary of modifications made to the bridge model and its analysis. Modifications shall be dated and shown in chronological order.
- The Rating Results Summary Table from the analysis, indicating the location and force effect of the controlling member. Example: "G4, Span 2, 27' from Begin CL of Bearings, Flexural".

PROCESS

There are two levels of Quality Control: (1) the thorough check performed on a newly created model, and (2) the check of a bridge model updated from a previously created model. Listed below are the requirements for the two levels of Quality Control.

CONTINUATION SHEET

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For newly created bridge models, the following information shall be checked:

- Verify that the model is coded correctly as compared to the bridge's As-Built drawings.
- For new designs, compare the results of the Level I and Level II Load Ratings. A significant difference in bridge capacity shall be investigated to identify the cause of the difference. If the difference is the result of an error in the Level II Load Rating model, the model shall be corrected. However, if the difference is due to an error in the Level I Load Rating, the Level I Load Rating shall be returned to the designer for correction.
- If there are any hand calculations created to supplement the Level II Load Rating, these shall be checked and documented.

For updates, the following information shall be checked:

- If there are no changes in the bridge's condition, (as reported in the latest inspection report) this should be stated in the description field, and no further check is required. However, the model shall be analyzed and the results shall be compared to the previous results. A significant difference in capacity shall be investigated and the reasons noted in the description field.
- If there are changes in the bridge condition, then the model shall be updated as follows:
 - Verify that all section loss documentation, changes in dead load or bridge configuration, and repair details, as reported in the latest inspection report have been incorporated into the model. If there are hand calculations created to supplement the Level II Load Rating, these shall be checked and documented.
 - Compare the updated Level II Load Rating capacity to the Level II capacity currently displayed in the Bridge Data Management System (BDMS). A significant difference in bridge capacity should have a valid reason. Examples include change in dead load, change in section loss and correction to the bridge model.
 - If there is a Level I Load Rating present in the system, compare the updated Level II Load Rating to the Level I Load Rating. A significant difference in bridge capacity shall be investigated to identify the cause of the difference and the reason noted in the description field. An outdated/incorrect Level I Load Rating shall be removed from BDMS and updated/replaced as described in Load Rating Engineering Instruction (EI 05-034).